

THE ZOOLOGIST

No. 695.—May, 1899.

EARLY SPRING MIGRATIONS.

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THE spring movements, or the passing out, of birds such as winter in these islands, as all observers on the east coast are aware, is far less in evidence than are those great and continuous inrushes in the autumn, extending over days, weeks, and months, and arresting attention by their very magnitude and persistence. In the vernal movement, or emigration, there is rarely anything to attract notice, for it seldom happens that flights of birds are seen actually leaving the shore; all the chief phenomena probably occurring in the night time, or at such a height as to be invisible to our eyes.

That great movements are in progress is suggested by the larger flights of various species which in the early spring congregate in the coast districts—here one day and gone the next—and having their places taken by other flocks presumably coming from more inland localities, all bent on leaving the country; for it is now a proved fact that, as a rule, birds emigrate from the same section of coast as witnessed their immigration, only in the reverse direction.

In this north-east corner of Lincolnshire, bordering the sea, the most obvious and perhaps the best marked spring movements are in connection with the Thrushes (*Turdus*). By the end of February, excepting such as are resident and nesting, the

immigrant Mistletoe-Thrushes (increasing numbers of which annually arrive every autumn) have taken their departure. Old cock Blackbirds begin to swarm in coast hedgerows, and in fact in every tall rough fence and coppice for miles inland, till we are amazed at their astonishing plenty and the facilities offered for the "four-and-twenty Blackbirds all baked in a pie." These Blackbirds, also the Thrushes which move later, do not appear to congregate into flocks on departing, but gradually thin off and disappear from their temporary retreats as the spirit moves them. This, however, is not the case with the northern Thrushes—Fieldfares and Redwings. Both are gregarious, and the former pre-eminently so; for days before setting off, Fieldfares sit in great flights in the middle of pastures, or crowd the summits of lofty trees within sound of the surf. Wild by nature and noisy to a degree, their harsh "yack-chuck-chuck" is about the most familiar of the bird sounds in the marshes. This mild winter has been very favourable for them with the abundant crop of hips and haws, yet with all this abundance neither young nor old have forgot the track of the Norway wind and the path to the summer home. Their going out is a long and protracted business, often not completed, although it begins early, before the middle or end of May. Redwings—most plentiful during this winter—are in a degree less gregarious, but they have much the same habits as their congeners, and leave at the same period as do the emigrating Thrushes (*T. musicus*), and they make a much more rapid and complete work of it than the Fieldfares, for we shall not find a Redwing after March, or middle of April at the latest, in the park-lands, paddocks, or meadows bordering the streams, where they have been hopping all the winter.

It is remarkable, considering the millions of Larks which for weeks and months pour on to the east coast in autumn from early in August to Christmas, so little is known of their emigration. Such, however, is the case; they succeed in slipping off quietly and unobserved, and probably, as in autumn, in straggling companies, and at night. Larks, however, do not always adopt open order on their migrations, and I have known them, under certain meteorological conditions, approach the coast in densely packed flocks like clouds, and hundreds of yards in extent.



Immigrating Lapwings, on first coming to land, sit for a time very closely packed where they happen to alight, as if comparing notes of their passage; and I have often noticed that before leaving their winter quarters they come together in the same way, covering the land like a black sheet.

Grey Crows have for weeks (March 24th) shown signs of leave-taking, and now scarcely any of the many hundreds can be seen in their winter haunts, or on the Humber tide-slobs. Black Carrion Crows move about the same time, and they are very numerous here in winter. I know of one small wood where about two hundred have come in each night to roost.

Golden-crested Wrens are always in evidence about the last week in March, not showing in the thousands of autumn immigration, but two and three together, and scattered all about the country. When delayed in departure by unfavourable weather conditions, I have known them accumulate in great numbers in the Flamborough hedgerows.

I often wonder what becomes of the Redbreasts which in October come in thousands at the same time as the Gold-crests. Robins which we see at low water skulking amidst blackened timbers of ancient wrecks miles from the shore—Robins in scores on the bleak wind-swept fitties sheltering amongst sea-plants, or on the marram-grown dune—Robins again in hundreds preening and sunning on the lee side of storm-clipt hedgerows, so numerous that on dull autumn days the dark strip of fence is bright as a flower-bank with the gleam of so many chestnut-red spots. Indications of the spring migration of Redbreasts are few; possibly they may return to their European quarters by another route. At Heligoland during the first part of April they are in the height of the movement.

Woodcocks and Gold-crests (Woodcock pilots) are fellow-travellers in autumn, and on the move at the same time in spring from the middle to the end of March, when the former approach the east coast and appear in the covers.

Peregrines in pairs move northward along the coast in March.

Greenfinches, Chaffinches, Twites, and Yellowhammers, particularly the latter, come in great flocks in oat-seed time, but are quickly gone, often remaining but a few hours.

Many Grey-Geese were observed by the coastguard passing over North Cotes on Feb. 10th and 11th. About the same date Golden Plovers were singing their spring song, one of the most charming sounds in nature, always reminding me of some of the flute-like notes of a Blackbird.

Resident Starlings are now (March 24th) busy at their nesting quarters; at least a dozen pairs in the ivy of this house. Tens of thousands, however, of the foreign purple-headed birds continue each afternoon to fly over the grounds to roost in a blackthorn cover in the marsh. They are late emigrants, and will probably not altogether disappear before April is well on.

I saw the Gold-crest here on the 24th, and a Woodcock the same day. On the 25th many Golden Plovers, several black-breasted, and the remainder more or less in transition. In meadow lands and pastures extraordinary numbers of Fieldfares and a few Redwings. The great severity of the weather since March 17th has probably retarded and thrown back any migratory movements on their parts, hence this great accumulation in our coast district.

Further Notes on Spring Migration.

On the night of Feb. 7th to 8th, Larks, Thrushes, and Redwings beat about the lantern of Flamborough Lighthouse, and again, mixed with Starlings, on the night of 14th to 15th.

Night of April 4th to 5th a Water-Rail was killed against the lantern; also two Golden-crested Wrens flew against the glass—this was just after midnight. The same night (4th to 5th) a remarkably fine heavy Woodcock flew against one of the telegraph wires near Filey Station, and all but decapitated itself, the head being only attached to the body by a loose fragment of skin. The Water-Rail which I obtained at the lighthouse on the 6th was bruised down one side, and appeared to have struck sideways. These notes are interesting, as they indicate the time these birds were on the move and actually leaving the country.

Between April 1st and 4th many Wheatears passed north, apparently touching the most prominent positions along the coast. They were, between these dates, seen in some number at the Spurn, Flamborough Head, Filey Brigg, and Scarborough

Castle Rock. In two of these places I did not see one on the 5th and 6th.

Wheatears appeared much earlier on the west coast. Mr. G. H. Caton Haigh wrote to me:—"On the 21st (March) we had the heaviest snowstorm that has occurred here for years; in the afternoon the snow was eight inches deep. In the midst of this storm the first Wheatears appeared, four or five, all males; they frequented the seaweed-covered rocks in company with scores of Meadow-Pipits."

ORIGINAL SKETCHES OF BRITISH BIRDS.

BY H. S. DAVENPORT.

THE RING-OUSEL* (*Turdus torquatus*).

My knowledge of this species has not been acquired to any exceeding extent in Leicestershire, though sundry authors in giving a list of the counties in which it has been known to breed do not exclude the shire which is chiefly famous for Fox-hunting. I have certainly met with the Ring-Ousel in the county on the spring and autumn migrations, but of course its true breeding places are the upland wastes and the wild and rocky districts in more mountainous parts of the country.

Leaving the cultivated lowlands and the civilization of village communities behind me one April morning during the spring of 1894, I started on a nesting tramp into the mountains between Festiniog and Dolgelly, my object being to spend an hour or so with the Ring-Ousel, and to get as far as Blaenlliw, a farm about five miles distant from the Llanuwchllyn end of Bala lake, tenanted by the kindest and most hospitable of people, and, what was infinitely more to my purpose, situated right in the heart of the mountains of North Wales—"right away from everywhere," as it was succinctly described to me. It was a charming morning, and for the first mile my course lay by the side of the river Lliw, where I had occasional visions of Common Sandpipers flitting to and fro, while here and there a Grey Wagtail, or a Pied Flycatcher, or a Dipper caught my eye. After passing the gold-mine, Carn Dochan by name, I began to rise the high ground, and a walk of another mile or so brought me nearer to the haunts of the Ring-Ousel, whose home in the summer is essentially a wild and romantic one. From the summit of the rock-strewn hill between Carn Dochan and Arenig a magnificent view of some of the surrounding country was unfolded to my gaze, while the Blackbird's mellow notes, which I had listened

* "Ousel." This spelling is by request of Mr. Davenport.—ED.

to only so recently and had easily identified amidst the general chorus, began at length to be replaced by those of the Ring-Ousel, and, though I am doubtless laying myself open to the charge of bad taste, I cannot say that I regretted the exchange.

A shy bird I am inclined to call the Ring-Ousel, for it will fly from rock to rock, generally keeping at a respectful distance; but when the vicinity of its nest is invaded, temerity becomes a very strongly marked characteristic of the species. In common with the Blackbird, it possesses the habit of elevating its tail on alighting, but in my humble judgment its song bears a stronger resemblance to that of the Mistle-Thrush than to that of the Blackbird. I have been fortunate enough to hear the Ring-Ousel and Mistle-Thrush sing within a short range of each other, and, though it is always far from my wish to appear dogmatic, I cannot agree with those writers who rather liken the former's song to that of the commoner species.

The Ring-Ousel also possesses three or four piping, plaintive notes, *pee-up, pee-up, pee-up, pee-up*, quickly repeated; they sound inexpressibly weird and sad when heard under certain conditions, and are, I believe, the call-notes of the male. While uttering them the bird will not improbably be found perched low down on a rock, and remaining so still that, unless the listener has a first-rate eye, it will be very hard to catch a glimpse of the performer. The alarm-note is a hurried *tac, tac, tac*.

A nest I found on the morning to which allusion has been made was placed on the ledge of a rock, and contained four eggs; they were greenish blue in ground colour, richly blotched and flecked with purplish brown. In fact, they were typical eggs of the species. Hard by was a Common Buzzard's nest containing two fresh eggs.

I had never considered the Ring-Ousel from an epicurean point of view until the autumn of 1894, when I formed one of a party Grouse-driving on the Stiperstones, a well-known stretch of rough and rocky moorland in Shropshire, when the bird that is so easily recognized by its conspicuous gorget was daintily served up as a second course one evening for my especial benefit. In my opinion it beats all the other members of the family *Turdinæ* in flavour, but is not comparable with either the Snipe or Land-Rail. I should add, however, that the bird I sampled was in

famous trim for the table, as it had been feeding on the cranberries and bilberries which grow in profusion on the Stiperstones range, and it was covered with fat. It had evidently preferred the sweeter bilberry to the cranberry, as I made a note of on picking it up.

I also found a nest of this species in the spring of 1894 on the rocky heights above Aberhirnant, Sir E. Buckley's picturesque residence in Merionethshire; it contained a single much-incubated egg. Ring-Ousels are undoubtedly partial to rocky situations, and it is perhaps worthy of remark that just about the time when Fieldfares and Redwings are quitting our shores for northern climes the Ring-Ousels make their reappearance. The nest bears a striking resemblance to that of the Blackbird, as do some of the eggs to those of that species; but a combination of care and patience should always prevent any blundering in the matter of a correct identification of the same.

THE WHEATEAR (*Saxicola cenanthe*).

According to my observations, one of the earliest of the spring migrants to put in an appearance in this county (Leicestershire) is the Wheatear. I find on reference to notes extending over several years that the little Chiffchaff hunts it very closely, but in the matter of actual precedence, in the large majority of cases, the Wheatear is easily first.

I have observed its sprightly form even before the middle of March in some seasons, and have been frequently struck with wonder at its comparative tameness on arrival in this country, allowing a very imminent approach as it does, and apparently courting close inspection. Invariably by itself when I have so observed it—for, like other migratory species, the males precede the females—it regards the intrusion of a visitor on its temporary halting ground with consummate indifference. I should here remark, however, that the grass pastures and tillage lands of High Leicestershire are little calculated to permanently attract such species as resort for breeding purposes to the downs and warrens and the wild, mountainous, and uncultivated districts of more southern counties.

A favourite resting ground in the spring of the year with an odd Wheatear or so is a large rabbit-warren on the borders of my

native village, and thither I generally betake myself in quest of the earliest arrival of this species. There is an old saying that spring has come when you can place your foot on five full-blown daisies in a cluster, but our feathered visitors, to my thinking, are the best harbingers of the glad time of the year; and whether it be sight of Wheatear or song of Chiffchaff, there is no doubting the eloquence of the reminder that the frosts and snows of winter are virtually a thing of the past.

Wheatears only stay a few days on their first arrival in these parts, moving forward to their breeding quarters as soon as they have recuperated their exhausted strength. Yet they afford us more than a passing glimpse of them in September, and it is not at all uncommon when out Partridge-shooting to notice them on the fallows, or in fields where stones have been gathered together into little heaps. Where, however, in the spring time only a single bird had been noticed, in the autumn there would frequently be two of them together.

I have only met with one instance of this species breeding in Leicestershire, and consider the fact of its having nested where it did most unusual. That Wheatears should repair to the rocky heights round about Bardon and Bradgate to rear their young does not surprise me in the least, for in such wild tracts they are quite in their element; but that a pair of these birds should have had recourse to a drain-pipe on the turnpike road in Skeffington parish, in which situation they built a nest in May, in the year 1875, and laid five eggs of a pale greenish blue speckled very distinctly with brown, was quite a novel experience. The eggs were slightly incubated when I found them, and the birds must have employed a vast amount of cunning to have escaped detection so long, as the drain-pipe was within but a short distance of the village school, and there are few boys who are not indefatigable nest-hunters during their play-hours. This nest was constructed of pretty much the same materials as are to be found in the general run of Wheatears' nests, the lining being of cow-hair, rabbits' fur, and a large quantity of feathers; but the exterior was composed of fibrous roots, dried bents, moss, and hay, and it was bits of the latter protruding from the drain-pipe that first gave me the clue to the nest. Of course my suspicions had been previously aroused by seeing the birds in the locality.

It is very seldom that Wheatears perch on trees, but I have seen them do so, and they have not avoided the higher branches. The male bird sings very prettily, and it has often been my good fortune to hear it in the rock-strewn mountains of North Wales. The song consists of four or five rich, clear, mellow notes succeeded by an equal number of trilling ones, which might easily be mistaken for some of the tremulous strains of the Whinchat, though they are more musical and less harsh. It sings when stationary as well as in the air, and a pretty sight it is to watch it quit its perch on a rock, mount into the air after the manner of the Whitethroat, twist and jerk about, singing all the while, and then descend to its original starting point. It frequently runs two or three steps before taking wing, and when apprehensive of danger it repeats again and again what sounds in my ears like *trz-wee, wee, trz-wee, wee*. The bird is not uncommon on the mountainous tracts of rocky moorland in North Wales, as I have already intimated, and a favourite place for its nest, according to my observations, is in a stone wall, though I have also met with nests in rabbit-burrows, as well as in the cavities beneath great boulders of rock. I found the species especially abundant on Lundy Island in the spring of 1897. I am always glad to get a chance of hearing a song which has been much vaunted by authors, though few birds are so speedily on the alert as Wheatears when they mark the approach of an intruder. The male bird, perched conspicuously on some rock or wall, is almost certain to catch the eye first, but probably, long before you have seen it, it has seen you, and telegraphed a warning note to its mate. It will fly about from boulder to boulder, out of sight one moment and reappearing the next; but do not be misled by an apparent indifference to your presence. Though you may note it dart forth and catch an insect, it is all the while vigilant and suspicious to a degree, and though you may crouch in the bracken and keep watch for an hour, it has not forgotten, nor will you entrap it into overlooking, your presence; while as to betraying the whereabouts of the nest, depend upon it, it will be pure guesswork if you find it. It is a vivacious little bird to watch, and seems to have a high opinion of its own superior intelligence; while the rapid up-and-down movements of the tail, which appears to be ever in motion, is a habit which we are more apt to associate with members of the Wagtail family.

I have noticed in clutches of eggs of this species, that when all the eggs have rust-coloured specks on the surface, one of the number generally has such specks much more strongly pronounced than the rest. Again, that when the clutch is of a pale greenish unspotted blue, uniform in colour, one egg occasionally exhibits a few faint rust-coloured specks. Such an egg I regard as answering to the variety that is so frequently found in the nests of other species, and in none is the difference so emphasized, in my opinion, as in the case of the Sparrow-Hawk and the Tree-Sparrow. Eight is freely spoken of as the extreme number of eggs in a clutch, but my belief is that six is much more frequent; very rarely seven. I have never found so many as eight myself, nor have I known anyone who has actually found this number; I have never met with a dealer who had a clutch of eight for sale, and therefore it would be interesting to me to learn what the authority is, and whence it emanated, for such a statement.

It is, of course, matter of history what immense numbers of Wheatears used to be taken in traps on the downs in bygone years when assembling previous to retiring from this country. In those days they were esteemed very delicious articles of food, and though the taste may not have died out, yet, owing to the large tracts of waste land which have been reclaimed since that era, the haunts of the Wheatear have been much encroached upon and virtually broken up. It is, too, common knowledge that the species is an adept at the art of mimicry; but it may not be so generally known that on fine warm nights in May it will sing till long after dark.

THE WHINCHAT (*Pratincola rubetra*).

I have noticed that this species is to be met with more frequently some years than in others, and though doubtless numbers resort to furze-clad commons for breeding purposes in general with their near relatives the Stonechats, I do not agree that the nest is of necessity to be sought in such wild districts. On the contrary, I look upon the Whinchat, which is a spring migrant and arrives in this country about the middle of April, as a sociable bird, and partial to cultivated fields and roadside hedges, whereabouts it finds an abundance of insectivorous food and suitable spots for rearing its young.

Considerable stress has been laid on the fact that Whinchats study the art of concealment when constructing their nests, or, perhaps I should more correctly say, when choosing a site for the same; but that such cannot be the invariable rule is, I think, made evident by the very open situations in which I have found them. On more than one occasion have I discovered a nest mainly owing to first having caught a passing glimpse of the glossy greenish-blue eggs reposing in it. I have known nests in various situations: in grass fields, in the banks of roadside ditches, in coarse grass on a hillside, on railway embankments, and at the bottom of gorse bushes on the upland wastes. There is no doubt that when built in this last-mentioned position the nest is exceedingly well hidden, and not likely to be easily discovered unless you chance to beat the bird out of her recess, or detect her quitting it as she hurriedly flies forth at the signal of danger from her mate. If the eggs are on the point of being hatched, the hen will sit uncommonly close; but if they have only been recently laid, the alarm-notes have the desired effect of scaring her away immediately.

During the period of incubation the male bird keeps a vigilant and incessant outlook, and gives warning of the approach of an intruder by sharply uttering the notes *utac, utac*, and there is no more convenient eminence for observing this habit than the top of a railway embankment, the cock bird, as a rule, being perched, sentinel-like, on the telegraph wires. My wife found two nests of this species on a grassy slope just outside Scarborough in the summer of 1892, each containing six eggs, which is the usual number of the clutch. There was nothing remarkable in the mere discovery of the nests beyond the fact that both were built within a few yards not only of each other, but of the old nests of the preceding year. Yet another instance of the tendency of birds to return annually to their erstwhile haunts. One of the nests I found by first noticing the eggs, was placed in an open bank in the middle of a field adjoining the river Lugg, in Herefordshire; it was the sort of situation a Redbreast might have chosen, but almost too exposed, I should have thought, for even this confidential species. Another nest was placed in a grass meadow that had been "laid" for hay, and could be seen from the foot-path that bisected it.

However, the most sure and effective way of discovering the nests of many of our spring migrants is to note the exact spot of a district they frequent on their arrival; there or thereabouts—unless the halt, as in the case of the Wheatear, is destined to be merely temporary—you may generally rely on meeting with them two or three weeks later. I took a clutch of seven beautiful eggs on May 18th, 1893, under circumstances which will serve by their narration a twofold purpose, *viz.* to adorn my story and point a moral.

I had noticed a pair of Whinchats frequenting a broken straggling hedgerow on their arrival just a month previously, and had also remarked that an artificial cutting or trench, overgrown with rank herbage, ran alongside of it. The movements of the birds showed pretty plainly that they had come to stay, so, merely jotting down in my note-book a memorandum as to the species, locality, and date, I troubled no more about the matter until the morning I removed their eggs to my cabinet. I have merely related the above as evidence of what can be done by a little intelligent observation in the early days of spring. I would also impress upon all those who tread the paths of ornithology the infinite value of learning the song of each different bird; many and many a time has a ripple of melody betrayed the fact of a nest in my vicinity when I had little suspected it. Again, it is of untold advantage to have at your fingers' ends the different haunts affected by the different species for nesting purposes, and the actual sites usually selected by them. Moreover, it is not probable that your eye will see every nest when you are hunting a hedge, or bank, or bushes, or the brushwood and undergrowth of plantations and woods—far from it; though the possession of a stout walking-stick, discreetly used, will frequently make up for any ocular shortcomings.

The eggs of the Whinchat vary in number from five to seven, but, as has been already intimated, six is a favourite clutch. Some are inclined to rotundity, others are elongated; while their ground colour is of a greenish-blue type, and occasionally exhibits a polished appearance, more especially when the eggs have been incubated for any length of time. Sometimes they are without the wreath of brownish frecklings round the larger end, but in most series this addition to their beauty is, I have reason to

believe, fairly well established; occasionally the specks are faintly distributed all over the shell. The illustrious Colonel Montagu, who states that the eggs are entirely blue, without a spot, and in this connection compares them with those of the Stonechat, evidently had an experience very different to more modern observers; and it is difficult to reconcile what he so emphatically alleges on the point with the observations that annually come under my own notice, except on the plausible supposition that it is only of late years the brown frecklings have become so pronounced a feature in the appearance of the egg. They have little of the turquoise-blue of the Hedge-Sparrow's eggs about them, and they ought never to be confused with those of the Redstart, and seldom with those of the Stonechat. The variety egg I have often noticed in nests of the Whinchat takes the form of a much lighter ground shade, and the frecklings are generally more emphasized. To assert, however, that this egg is invariably the last one laid is contrary to the fact, for I have known instances when it was the first.

Sometimes when in pursuit of food this species has a pretty habit of poising itself on hovering wing—after the manner of Swallows in hay-fields before the grass has been laid low—and then darting down, snatching its prey, and flitting back as quickly as possible to the top of the bending spray from which it had only a few moments previously gone through the same process. I do not mean that Swallows actually perform all this—only that their suspensory movements in mid air when hawking for insects at a low level over tall standing grass are very similar to the hoverings of the Whinchat. The analogy, however, must not be carried any farther, for as the former species snaps up its prey at about its own level, the latter often indulges in a downward, almost pouncing kind of movement.

The statement that the Whinchat as a species passes the winter in these islands is, of course, entirely apocryphal; it may be that individuals have remained on occasions, but in the majority of cases it is warrantable to suppose that casual observers have mistaken the Stonechat for the bird under discussion. Neither have I any faith in the assertion that this species is double-brooded, and only regret that there is no means of tracing the authority for some of the remarkable statements

with which not a little of the popular literature of the every-day bird-life of our islands is overburdened.

The song of the Whinchat is not unlikely to escape notice amidst the conflicting strains of various warblers, and, even if heard, may easily be mistaken by careless listeners for that of the Redstart. There is a peculiar harshness, not by any means unpleasing, about it; but, though I am very familiar with it, and never deem a few minutes' delay in order to listen to it as time ill-spent, I have presence of mind enough to know how feeble most attempts are that aim at reducing the songs of birds to writing. Syllables suggestive of the call-notes are all very well and frequently instructive, as, for instance, the late Mr. Seebohm's felicitous rendering of the Lesser Redpoll's call-note by the French word *henri*; nevertheless, attempts to give the full song of a bird on paper must more often than not end in fiasco. That of the Whinchat is interspersed with some beautiful flute-like strains, but the harsher tones predominate in the refrain which is not disappointingly curtailed, and is repeated again and again from some elevated perch where the performer takes up a conspicuous position on the topmost twig for minutes together. The performance is usually accompanied by a fanning motion of the tail.

My impression is that Whinchats' nests need not be looked for much before the end of the second week in May; my earliest recorded date is on May 12th for the first egg, and some other dates run thus: May 21st, May 26th, May 27th, May 28th, and May 29th; and it is partly on this account—late nesting—that I decline to accept the apparently irresponsible statement that the species rears two broods every year. The young of the first nest cannot be taught to provide for themselves all in a moment, and though some birds undoubtedly have two or three broods in the course of a summer, they are chiefly those that nest in our gardens and orchards, and whose young are out of the first-laid eggs before some of the migrants have reached our shores. Again, if these alleged second broods were so common, the males would surely treat us to a second edition of their May concert in June, which, as a matter of fact, they do not. Towards the end of this latter month, to my mind, it is quite melancholy to take a stroll through the woods—almost every voice is hushed.

The male bird is quickly apprehensive of danger, and in nine cases out of ten espies the intruder long before the latter espies him. It is too late to acquire much information about the site of the nest when your first intimation of the presence of this pretty migrant is a sight of him on some commanding perch. As in the case of the Wheatear, the Goldfinch, and the Golden-crested Wren, I have never discovered the male Whinchat actively participating in the building of the nest, and I am quite positive that not a few of the smaller nests which we come across in this country in the course of the summer are solely the work of the females.

One word more. Is the Whinchat a mimic? It certainly possesses a note at times not unlike that of a Partridge, though, of course, on a modified scale.

THE STONECHAT (*Pratincola rubicola*).

The Stonechat affects those wild uplands and barren heaths which are studded with a luxuriant growth of furze and other bushes of a corresponding height, and here it secures concealment for its nest and young, and a supply of food, more or less, all the year round. I have only twice met with this bird in Leicestershire, and that was during the winter of 1886, and the autumn of 1898. I should mention, perhaps, that my home for over ten years was at Ashlands in that county, between two and three miles from my native village, and in the winter I have referred to a Stonechat used to come and perch on the temporary railings which protected a new cricket-ground that was being made near to the house. None of the workmen engaged in levelling the turf had the least idea what the bird was, though they showed a little discernment when sending me a message to the effect that "a funny kind of Flycatcher" was their constant companion. Certainly, the Stonechat's method of taking its food on the wing very much resembles that of the bird above mentioned, and the fact of its presence near to Ashlands in mid-winter tended to confirm Harley's statement to the effect that at that season "it left its ordinary habitat of the whin-covered moor and wild for the cultivated field and hedgerow." What warranty he had, however, for saying that the nest was occasionally lodged on the horizontal bough of a Scotch fir, I know not.

I am presumptuous enough to think, after careful observation, that the nomenclature of each of the three species, viz. the

Wheatear, the Whinchat, and the Stonechat, is open to improvement, and that if lots were drawn as to which of the names should be applied to each bird, the result might not improbably be more in accordance with their individual haunts and habits than is now the case. The favourite perch of the Wheatear is beyond all doubt on some wall or rock, and its affection for stony places is notorious. The Whinchat, to my thinking, frequents the lowland pastures more frequently than the upland heaths, and is not necessarily to be sought amongst whins; while, on the contrary, the haunts of the Stonechat are confined almost exclusively to wild heaths and commons, and on the topmost sprays of the whin-bushes it is almost invariably to be seen stationed. Nevertheless, the Wheatear does not take its name from the haunts it particularly affects, as its congeners are supposed to do.

Bircher Common—or, to use the vernacular of the district, Bircher "Kimmin"—is one of the favourite resorts in Herefordshire of the Stonechat. Here it is an early breeder, and those who are in want of its eggs and meditate a search for the same on their own account, had better make a note of the fact. The allegation that it rears two broods in a season, however, is probably correct. The nest, somewhat slovenly put together, is almost invariably placed on the ground in the recess of some furze-bush, and is most skilfully concealed. It is composed of moss and dry grass, and lined with finer grass, hair, and occasionally a few feathers, while I have one nest in my memory, taken on Bircher Common, that was profusely lined with sheep's wool.

The eggs are subject to a certain amount of variation, but the ground colour is generally of a pale greenish blue, typical more of the shade of Spotted Flycatchers' eggs than that of those of its allied species, the Whinchat. They are, however, very prettily and distinctly mottled with specks and spots of reddish brown, which, when not confluent, frequently form a wreath round the broad end. I have never come across the unspotted variety in my wanderings. The most perfect clutch of Stonechat's eggs I ever saw came from the common I have already alluded to; they were not only of unusual size, but a magnificent zone of bold brown markings enriched the broad end of every one of them. Five is as frequent a number in a clutch as six, according to my observations.

THE REDSTART (*Ruticilla phœnicurus*).

Many birds pause awhile after reaching this country before engaging in nesting operations, but I am rather inclined to think that the Redstart is not one of the number. I knew of a nest in the hole of a tree one year that contained an egg so soon as the first day of May. Early on the morning of May 5th a heavy snowstorm raged for a couple of hours, and when, shortly afterwards, I inspected the nest, I found the hole, which faced due north, filled with snow, some of the eggs broken, the interior of the nest disarranged, and the locality forsaken by the birds themselves.

I have found many nests of this species in the course of my rambles, and noticed that, in addition to being a comparatively early builder, an especially favourite haunt is the pollard or "sally" trees—as they are termed in some parts of Herefordshire—that form so ornamental an appendage to the banks of rivers. I am not quite sure that pollard willows do not more correctly express the type of tree I have in my mind's eye; but willow, pollard, and "sally," all, I believe, indicate its colloquial appellation in different parts of the country. In the natural holes of such trees the Redstart loves to nidificate, though suitable cavities in stone walls are equally resorted to.

With regard to its eggs, I have found the clutches varying from five to eight, but am of opinion that six, equally with seven, is the more favoured number. They are smaller, and lighter in shade than Hedge-Sparrows', and the shell is far more brittle. Touching the colouring of the same, I find myself in distinct opposition to the experience and opinion of Mr. C. Dixon, as enunciated at page 138 of his 'Nests and Eggs of British Birds.' The author writes:—"It is said that the eggs of this species are 'occasionally speckled with reddish,' but surely this must be a mistake." I have not been able to trace the statement to which the author referred to above takes exception, but I can unhesitatingly corroborate its accuracy. I have on more than one occasion possessed myself of Redstarts' eggs with rufous brown specklings on them, though others in the clutch have been without any colouration, beyond, of course, that of the uniform pale greenish-blue ground shade.

Nevertheless, it is only a few summers ago that I found in a hole in an ash-tree near to Rolleston Hall, the residence

of Lord Churchill in this county, a clutch of six Redstarts' eggs, all more or less boldly spotted with brown. The value of my "find," however, was sadly discounted by the fact of the eggs being on the point of hatching. In Mr. C. Dixon's same work, and at the bottom of the same page, it is alleged that Hedge-Sparrows' eggs are the only ones with which those of the Redstart can be confused in our islands. In my opinion, the latter bear a far more striking resemblance to Pied Flycatchers' than to Hedge-Sparrows' eggs, compare them how you will. Not only in grain and colour, but also in size and shape, Redstarts' eggs, I contend, approximate more nearly to those of the Pied Flycatcher. The highly polished shell to which some writers so pointedly invite attention as a distinguishing feature of the egg of the Redstart, I have never been discriminating enough to notice.

The song of the Redstart I am inclined to characterize as unequal. I have frequently been astounded by the melody flowing from the throat of this little bird, but on such occasions it has almost always been perched amidst the uppermost branches of lofty poplars, and April has invariably been the month when I have heard it warbling what I deem its most fascinating notes. It is many years now since I was first attracted by its song under such circumstances; and having previously regarded it as merely a mediocre performer, and as one that usually sang from a lower level, I brought my field-glasses to bear on the songster, to avoid any risk of blundering; and what I then observed was recorded in my note-book on the spot. Subsequent meetings with the Redstart in April in Ireland, Wales, and other wide-distant portions of these islands, have not led me to alter the opinion I formed of its carol as delivered from the upper branches of a Leicestershire poplar—long, long ago.

In support of what I have written above, it gives me satisfaction to quote from Mudie's '*British Birds*,' published in 1853, as follows:—"When the males arrive, they sing from elevated perches; but after the operations of nesting are begun, they sing lower, and always within a short distance of the nest." While, somewhat curiously, in the same connection and evidently pursuing the same train of thought, Seeböhm wrote exactly thirty years later:—"It may also be noticed that the Redstart, directly after its arrival in April, seeks the tree-tops for his orchestra; but as the summer

comes on this habit is lost, and the bird warbles from a lower perch, usually in the neighbourhood of his nest."

The Redstart has a very peculiar habit of shaking the lower portion of its body at intervals when stationary, quite different from the gentle, fanning, up and down movement of the tail that is associated with the Whinchat. The former seems to be periodically shaking out its feathers, somewhat after the manner of a Peacock, though, of course, on a much less obtrusive scale. The song in a general way, as I believe has been stated in my notice of the Whinchat, bears some resemblance to that of this latter bird. It has likewise a peculiarly rich, liquid note, occasionally heard when in flight, sounding in my ears like *tu-ee, tu-ee, tu-ee, tu-ee, tu-ee*.

However, to revert for one moment to its nesting site: the hole chosen is invariably a natural one; there is no such thing as artificially adapting it to its requirements, as is the case with some of the Woodpeckers. The nest itself is artlessly put together, and is formed of roots, small fibres, and dry grass, and frequently a little wool, and is lined with hair and occasionally a few feathers.

I do not see that we have any means of ascertaining whether or not this species is life-paired. Redstarts are, beyond question, very conservative in their regard for old haunts, but, considering it is generally admitted that the sexes do not migrate in company—the males usually preceding the females in the spring of the year—it must be purely a matter of speculation.

One other little point I would touch on before closing this sketch; it refers to the marked similarity between the alarm-note of the Redstart and that of the Chaffinch. It may possibly take a very skilful ear to discriminate between the two utterances, but I think it will be admitted that there is a more plaintive character about the alarm-note of the Redstart than is noticeable in the case of the other species; while the former also frequently emits a sound, two or three times quickly repeated, which resembles that form of annoyance in an individual so commonly expressed by the tongue and the teeth without the aid of language.

In the summer of 1896 I found a Redstart's nest, full of young, in a kettle hung on a nail in an old tumble-down shed near to Keythorpe. I have also known the species utilize a site just previously tenanted—with success in the matter of rearing their young—by a pair of Great Tits.

THE TREK-BOKKE (*GAZELLA EUCHORE*) OF THE CAPE COLONY.

BY S. C. CRONWRIGHT-SCHREINER.

SOUTH AFRICA has probably never been surpassed in the variety and profusion of its wild animals; it has certainly had nothing more wonderful than its prodigious numbers of Springbucks. These fleet and beautiful creatures still exist in numbers incredible to people unacquainted with the country, though they have lately so decreased that it is almost impossible now to form any conception of the hosts that infested the endless flats only a few years ago. Where Springbucks run wild in large numbers they are distinguished as "Hou-bokke" and "Trek-bokke," the "Hou-bokke" being bucks (we term all our Antelopes "bucks") that live permanently on the same veld, the "Trek-bokke" those that congregate in vast hosts and migrate from one part of the country to another in seasons of drought. When the country was so densely covered with all kinds of game, the vast herds of Springbucks quickly felt the effects of the frequent droughts that devastate the inland up-country parts, and began to "trek." Congregating in millions, they moved off in search of better veld, destroying everything in their march over the arid flats. The "Trek-bokke" can only be compared, in regard to number, with the Bison of North America, or the Pigeons of the Canadas. To say they migrate in millions is to employ an ordinary figure of speech used vaguely to convey the idea of great numbers; but in the case of these bucks it is the literal truth.

Gordon Cumming, who shot in South Africa in the early forties, and whose book ('The Lion Hunter in South Africa'), more than any book with which I am acquainted, gives some idea of the extraordinary variety and profusion of game which then existed, refers to a "Trek-bokken or grand migration of Springboks" which he saw between Cradock and Colesberg, and vividly describes how he stood on the forechest of his waggon, watching the bucks pass "like the flood of some great river," during which time "these vast legions continued streaming through the nek in the hills in one unbroken compact phalanx"; then he saddled his horse, rode into the midst of them, and shot until he cried "Enough." But this vast and surprising trek was, he says, "infinitely surpassed" by one he saw some days later. He "beheld the plains, and even the hillsides, which stretched away on every side, thickly covered, not with herds, but with one vast mass

of Springboks; as far as the eye could strain the landscape was alive with them, until they softened down into a dim mass of living creatures." It would be vain, he says, to attempt to form any idea of the number of Antelopes he saw on that day, but he has no hesitation in saying that "some hundreds of thousands were within the compass of my (his) vision." A Boer with whom he was shooting acknowledged that "it was a very fair Trek-bokken, but observed that it was not many when compared with what he had seen." "This morning," remarked the Boer, "you beheld only one flat covered with Springboks, but I give you my word that I have ridden a long day's journey over a succession of flats covered with them as far as I could see, and as thick as Sheep in a fold."

A generation back they trekked in such dense masses that they used sometimes to pass right through the streets of the small up-country towns. I have known old people who walked among them, and actually now and then touched them with their hand. Men have gone in armed only with a heavy stick, and killed as many as they wished. Native herdsmen have been trampled to death by the Bucks, and droves of Afrikander Sheep carried away, never to be recovered, in the surging crowd. So dense is the mass at times, and so overpowering the pressure from the millions behind, that if a sluit (gully) is come to, so wide and deep that the Bucks cannot leap over or go through it, the front ranks are forced in until it is levelled up by their bodies, when the mass marches over and continues its irresistible way. Again, when they come to our large rivers, which run almost dry before the summer storms fall, the thirsty creatures stream over the steep banks into the bed of the river, and drink themselves heavy with water. They crowd into the river-bed quicker than they can get out, and the crush is so great at times as they climb the steep banks that men have gone in on foot unarmed, and secured as many as they wished simply by catching them with the naked hand and breaking their hind legs. There was a certain element of danger in doing this, for, if the Bucks turned, the hunters ran the risk of being trampled to death. The density of such masses may be imagined when one remembers how timid and wary of approach these Antelopes are.

The Cape Colony has from time to time during recent years been visited by the Trek-bokke, though not in such numbers as the old farmers used to describe, and, I have no doubt, truthfully describe. In 1895, however, the up-country was suffering from a long drought, which was particularly severe in Namaqualand; and the Trek-bokke began to move well into the Colony. There were rumours of their coming, and then it was said that they were unusually numerous—that it was a "big trek." This soon proved to be the case. It was eventually known that they had not appeared in such numbers for thirty or forty years. They kidded on the Kaaiken

Bult, in the district of Prieska, and then resumed their trek in search of better veld. Mr. J. W. Wright, a relative of mine, was then living at Karree Kloof, a farm about ten hours by cart (six miles to the hour) west of the railway in the district of Hope Town. In July, 1896, he wrote that the Trek-bokke were approaching Karree Kloof, and invited me to come and see them. Believing that such a large "trek" might never be seen again, I accepted his invitation.

Starting by train from Kimberley, I alighted at Kran Kuil, a railway station not far south of the Orange River. Leaving Kran Kuil by post-cart early next morning, and passing the little village of Strydenburg, with its immense "pan," the home when full of thousands of wild-fowl, after a ten hours' drive in a rickety cart, one of whose wheels was dished the wrong way, and threatened to fall to pieces every moment, I reached Karree Kloof at sundown. Our conversation that evening was of course largely about the Springbucks. Some hundred yards to the back of the house stands a kraal. Ten or fifteen years earlier Mr. Wright saw the Trek-bokke stream through between the house and the kraal. The present trek had approached within about four hours of Karree Kloof, and then turned, and was now some distance farther away. We started in a four-in-hand Cape-cart next day to see the Bucks. Passing through veld where the trek had recently been, and by many a dead Buck, we slept that night at Omdraai's Vley, in the district of Prieska, where two young Englishmen had an accommodation house and a country shop. Over a large fire that evening (it was mid-winter and freezing hard every night) we heard the latest news of the trek. The nearest Bucks were then about two hours farther on. A portion had passed over Omdraai's Vley, taking their way through a wire-fenced Ostrich camp, breaking some of the wires. To clear this camp of those that remained in, about one thousand had to be shot, one of which was an albino. A large number had of course been wounded, and many kids, whose mothers had been shot, died. In that camp alone two thousand must have perished. The owners of the shop were buying Springbuck skins at 5d. and 6d. each at the rate of three thousand a week, and had already purchased thousands of pounds of "biltong" (the raw flesh cut into narrow strips and dried), as had also Mr. Wright at Karree Kloof. It was reckoned that, in the district of Prieska alone, some hundreds of thousands of Bucks had been shot, and nearly as many wounded, and the little kids were dying in thousands; yet there was no appreciable diminution in their numbers. Among other things, we heard that various wild carnivora were following the trek, a Leopard having been shot in the open veld, and "Wild Dogs" (*Lycaon pictus*) having been seen in pursuit; also that Antelopes, unknown in those parts for many years, had appeared, carried along in the living flood which was pouring over the country. In

fact, at Karree Kloof, which the Bucks had not actually encroached upon, a Kudu and three Haartebeeste had been found in the camps, the Kudu (a bull) having broken off a horn in jumping over the wire fence.

Taking an early breakfast next morning, we inspanned, and, after several hours' drive, passing a pair of wild Ostriches with chicks on the way, saw the first of the Bucks, some ten or fifteen thousand, in several lots. One lot began to run, to cross the road in front of us. Whipping the horses up until we were close enough, we alighted with our rifles, and as the Bucks came bounding past shot several, and then, cutting off the hind legs of such as were fat at the small of the back, we slung them on the axle of the cart and drove on. After proceeding for a couple of hours, and shooting another Buck or two from the road, we outspanned at a farm called Weel Pan, and had an early lunch. The "pan" was dry and the house forsaken, except for a Hottentot servant. The farm was 12,000 morgen (about 25,000 acres) in extent, but had been so eaten off and tramped out by the Bucks that the owner had had to remove all his stock. This was the case with many farms in the path of the Bucks; the veld had been destroyed, cultivated lands eaten bare, and camp fences broken down by the resistless mass of Antelopes. Mr. Wright mentioned that he had 40,000 morgen of land on the Kaaiken Bult, which the Bucks had so destroyed that he was removing all his stock from it. Before I left Karree Kloof, on my way home, the cattle from the Kaaiken Bult arrived there, having been driven twenty-six hours (156 miles) to be pastured where the devastating Bucks had not been.

After lunch we changed our direction, and drove on, hoping to see a denser part of the trek, shooting an occasional Buck from the road. The Dutch farmers were out by the hundred; all day shots could be heard, and occasionally a horseman could be seen scurrying along the road to head a lot of Bucks, and we witnessed an exciting chase after a wounded ram, which, when the horseman dismounted, charged him—a very rare thing for a Springbuck to do. The whole veld was damaged; it was hardly possible to put one's foot down in that vast extent of country without treading on spoor of the Springbuck; and the Karoo bushes were torn and broken by their sharp feet. We passed several "outspans" where the hunters had encamped for days, with their waggons, and carts and horses—deserted camps which were marked by ash-heaps and charred bones, and the straw of bundles of forage; while offal and heads and the lower portions of the legs of the Bucks lay about to such an extent as to be quite disagreeable. We constantly saw dead Bucks, and there were especially large numbers of kids which had perished from starvation, their mothers having been shot. The Dutch farmers made on an average about 2s. 6d. per Buck—6d. for the skin, 2s. for the biltong. They enjoyed the sport, made a few sovereigns,

and did the country a service. Every farmhouse we came to was simply festooned with drying biltong, the ground around being covered with pegged-out skins. Many Bucks were being conveyed by waggon to the railway, and sent to the large centres: Johannesburg, Cape Town, Kimberley, Port Elizabeth, and other towns. On our return journey we passed a waggon laden with two hundred and thirty Bucks going to Kran Kuil Station, and after our arrival at Karree Kloof another passed with eighty more. This was going on over a large extent of country; we but saw the edges of the trek. Venison of the finest quality in the world was plentiful.

In the afternoon we gradually left the noise of the hunters behind, and drove to quieter quarters, until at length our wish to see large numbers of the Bucks was gratified. On driving over a low nek of land a vast, undisturbed, glittering plain lay before us. Our glance at one sweep took in the expanse of brown country, bounded in the distance by low kopjes, bathed in the wonderful glowing tints of the Karoo; and throughout its whole extent the exquisite Antelopes grazed peacefully in the warm afternoon winter sunshine. It was as beautiful as it was wondrous. Undisturbed by the hunters, they were not huddled together in separate lots or running in close array, but were distributed in one unbroken mass over the whole expanse—"not herds," as Gordon Cumming said, "but one unbroken mass of Springbucks"—giving quite a whitish tint to the veld, almost as though there had been a very light fall of snow.

We alighted from the cart, put our rifles aside, and sat down to watch them, and take in a sight we most certainly should never see again. We were three farmers, accustomed to estimate numbers of small stock, and we had an excellent pair of field-glasses. I suggested to my friends that we should endeavour accurately to estimate how many Bucks were before us. With the aid of the field-glasses we deliberately formed a careful estimate, taking them in sections, and checking one another's calculations. We eventually computed the number to be not less than 500,000—half a million Springbucks in sight at one moment. I have no hesitation in saying that that estimate is not excessive. We were thoroughly accustomed to the vast South African veld and the sights it affords, but we sat in silence and feasted our eyes on this wonderful spectacle. Now, to obtain some rough idea of the prodigious number of Bucks in the whole trek, it must be remembered it was computed that they extended twenty-three hours in one direction, and from two to three in the other—that is, the whole trek occupied a space of country 138 by 15 miles! Of course they were not equally dense throughout this area; but when one says they were in millions, it is the literal truth.

Having watched the scene long enough, we started on our homeward journey, leaving the Bucks undisturbed. We slept that night at Schilder

Pan, the farm of Mr. Jackson, who made us most welcome. Chatting about the Bucks, Mr. Jackson said we had not seen the densest part of the trek, and told us of two incidents which indicated how thick the crowd had been on a portion of his farm. His son on one occasion got ahead of the Bucks, in a narrow run between some kopjes, down which he knew they were coming. They did come, and he only escaped being trampled to death by taking shelter behind a large stone, past which they rushed like a torrent. He actually shot one within a yard or two of the stone before taking refuge behind it. The other incident—it occurred on two occasions—was more remarkable. When Springbuck are shot at they all usually begin to run in one direction, up the wind as a rule; and, if they are in large numbers and hard pressed, they pass in two streams on each side of the object they wish to avoid. (When they once take their direction they will keep it. Hunters know this well. Shooting near Colesberg, in 1880, we used to start the Bucks running, and then ride to head them off. I have thus ridden right through a flying herd of only a few hundreds.) When the object is very close they pass in front of it in a kind of crescent form, giving a little in the centre, and thus closing back towards the original line of their flight. As the Karoo veld is very bare and sandy, they often raise, and run enveloped in, a cloud of dust. Mr. Jackson was out in his four-in-hand Cape-cart shooting Trek-bokke. As he drove along the dense masses began to cut across in front of him enveloped in a cloud of dust, which, as the numbers thickened and the pace increased, grew denser, and as it grew denser and obscured their sight the rushing mass came closer and closer to the cart, until at last, in a thick storm of blinding dust, some of the Bucks actually ran against the cart-wheels and under the horses' bellies. A man on foot would probably have been knocked down and trampled to death.

No careful study has, to my knowledge, been made of the habits of the Trek-bokke. It is known that they migrate in search of better veld, urged thereto by drought. They do not travel fast when doing this, but feed along. In some out-of-the-way parts they kid, and when the kids are strong enough they return to their own veld, if rain has fallen. If it continues dry they do not return at once, but stay on till later in the season, or perhaps over another kidding. How they know when it has rained where they came from, when perhaps it is dry where they are, one cannot say; but it is generally held that, through a subtle sense of smell, they do know. Whether the Trek-bokke of forty or fifty years ago or earlier came from some particular part of the country and again returned to it, I do not know, but I do not think this was the case; it seems more likely that when the Bucks were in such countless numbers all over the country they simply all moved off together during droughts in search of food. Trek-bokke then might have come from any part of the country suffering severely from

drought, returning in time, no doubt, each to its particular haunts. I do not think that there is any difference between the "Trek-bokke" and the "Hou-bokke," except in the matter of weight, the Trek-bokke averaging about 10 lb. to 15 lb. lighter. This difference in weight, however, is probably accounted for by the quieter life of the "Hou-bokke," for veld will permanently support a few Bucks in good condition where a large number would starve. I do not know whether there were "Hou-bokke" in the earlier days. To-day the veld is never so eaten off and destroyed as when the Bucks and other game were in such enormous numbers, so there is no need for the few Bucks now left to migrate. But in the north-west of the Colony, and in Great Namaqualand, they are evidently still to be found in large numbers, and these, when a severe drought comes, trek into the Karoo of the Colony in search of food. As I have said, these Bucks, when trekking down, do not travel fast; but the old Dutch farmers, who should know their habits well, say that when they return they travel at a great pace, even as fast as one hundred miles a day. How true this is I cannot say; it cannot seem impossible to such as know the extraordinary fleetness and staying power of these Antelopes. However considered, the Trek-bokken are one of the most wonderful occurrences in a wonderful country. Yet it is probable that the days of the very large treks are past, and that such a sight as we saw in 1896 will never be seen again.

[Mr. Cronwright-Schreiner informs us he has also sent this communication to the 'Cape Times.'—ED.]

NOTES AND QUERIES.

MAMMALIA.

RODENTIA.

An Albino of the Beaver (*Castor canadensis*).—From all accounts by those in a position to know, the Beaver seems to be following the Buffalo into a precarious existence. Before long now both may have undergone the fate of so many other extinct species. It is therefore of importance that any items of information about the Beaver should be placed upon record. So far as I can find in the limited literature of the subject within my reach, no notice seems to have been taken of albinism in the Beaver, though doubtless the variation takes place as frequently in the species as in other animals. On the walls of the Mansion House of Mavisgrove here, there has hung for several generations past a square glazed case which contains a very beautiful pure white Beaver skin. Not long ago I had the privilege of examining it, and, although it is now one hundred and twenty-one years since it was made into a specimen, the skin is still in the best of preservation. There is a printed label attached, but the record thereon is merely a paraphrase of a written statement, now faded greatly, which is gummed to the back of the case. The written document is as follows:—“In the year 1777 Mr. Joseph Aimse, the Indian interpreter at Michilimackinac, informed Colonel de Peyster, then Major to the Kings Regt., and Commandant of that post, situated at the confluence of the Lakes Huron and Michigan, that an Indian had been seen standing for several days at the corner of the storehouse, who had just informed him that he had been directed by a spirit in the form of an Amik Waubaskan (white Beaver),* whilst slumbering in the Great Beaver Island, to take his stand there, and kill the commandant as he passed; but, finding his heart fail to give the fatal blow, he begged to be sent out of that part of the country which the commandant refused, but ordered him to go to the island and fetch him the white Beaver, which the Indian accordingly did; and this is the skin of it.—(Signed) A. S. DE PEYSTER.” Apparently this document is in the handwriting of Col. Arentz Schuyler de Peyster himself, who, as I find from a short biographical notice in McDowall's ‘Sketches from Nature,’ pp. 314–321, was a Dutchman by extraction, but a Briton by

* The only white one seen in that part of the country.

adoption. His grandfather was a magistrate in Amsterdam, and his father, who emigrated to America at an early age, entered the Army, and held for years the appointment of Lieutenant-Governor of New York. Col. de Peyster entered the Army before he was seventeen years of age, and the best part of his military career was spent in Canada. His wife was a Dumfries lady, and probably for that reason the last years of his life were spent here. He died at Dumfries Nov. 26th, 1822, at the age of ninety-seven, having held the Royal Commission for upwards of fourscore years.—ROBERT SERVICE (Maxwelltown, Dumfries).

[A white Tiger is reported as having recently been shot in Assam. The general colouration of the skin is white, the stripes not being very clearly indicated. We read that the skin has been sent to Mr. Newing, a Calcutta taxidermist, for preservation.—ED.]

AVES.

White Eggs of Redbreast (*Erithacus rubecula*).—On the 15th of April this year I found a Redbreast's nest in a bank, containing a pure white egg, and at the time of writing there are five, and the bird is sitting. The eggs are very round in shape, and greatly resemble a small Kingfisher's egg in appearance. I enclose one for inspection. — WM. DELVES, Jun. (Maynard's Green, Horsham Road, Sussex).

[Pure white eggs of the Robin are well known, though some collectors have never met with them under natural conditions. This bird is now very abundant on my part of the Surrey Hills, and Mr. Service informs me of the same plentitude near Dumfries, where he has never previously seen the nests so numerous.—ED.]

A Stray Visitor to Kent.—On Saturday morning (April 15th), whilst eating my breakfast opposite a window facing my garden, I observed a tiny Warbler doing me good service by clearing the aphides from my rose trees. The sun was shining, and the bird was only about eight feet distant from me, so that I could see it quite distinctly; it was about the size of a Goldcrest, but olive-green above, pale yellow beneath, and with a well-defined eye-stripe. If this was not *Phylloscopus superciliosus*, I can give no name to it, for it was far too small for a Chiffchaff or a Willow Warbler, both of which I often see either in the spring or autumn in my garden. I watched the bird carefully for three or four minutes before it flew away. — A. G. BUTLER (Beckenham Road, Beckenham, Kent).

The Grasshopper Warbler in Breconshire.—As might be expected from the nature of the country, the Grasshopper Warbler (*Sylvia locustella*) is not uncommon in Breconshire. We have here most of the conditions in which this little summer migrant delights, such as rushy meadows with

grass tussocks here and there, neglected fields containing clumps of stunted blackthorn bushes and brambles, dingles furnished with little alder bushes, and dry wastes of low cover. In places of this kind it nests, and may be heard singing during the season, the favourite haunt being round Llangorse Lake, where it may be termed common. I first heard the unmistakable little trill of this bird when I came to live here fifteen years ago, and found the first nest on May 29th, 1886. It was placed in a tuft of rushes, and contained five fresh eggs, two of which, with the nest, are now in the Natural History Museum, South Kensington. I have since found five more nests. Eggs from three sets in my possession are mostly zoned; one clutch taken on June 9th, 1893, is unusually highly coloured. Every nest is wonderfully well concealed. If it contains eggs the sitting bird disappears at once in the nearest cover; if there are young, both birds come back and commence creeping and tumbling about, wings and tails spread, within three or four yards of a bystander's feet, uttering a rapid metallic "tick." For some years I tried to shoot a male bird before the nesting season, but without success, owing to the persistent way in which it keeps out of sight when singing, and have been obliged to content myself with a pair of nestlings, which, set up in a nest, make a nice little case. With a bird like this, which is often heard but seldom seen, the song is all-important for identification purposes. In this case it seems to me to be precisely like the sound made in drawing out a line from a small Trout fishing-reel the check spring of which happens to have the right pitch. During fifteen years the earliest date on which I have heard the song is April 15th, and the latest July 24th. It is sometimes to be heard in July in fields of standing wheat.—E. A. SWAINSON (Woodlands, Brecon).

Common Crossbill in Worcestershire.—Whilst rambling over Brake Wood, near Churchill, on April 15th last, I noticed a few Crossbills (*Loxia curvirostra*) among the Scotch firs, busily employed with the cones. Upon making enquiries from the keeper, he stated that he had noticed them there for the last three years, sometimes numbering upwards of fifty, though this winter not so plentiful. I could not satisfy myself that they were breeding there. The cover is only a small one, and gave me a splendid opportunity of finding their nest had they been so doing.—J. STEELE-ELLIOTT (Hillcrest, Clent).

Girl Bunting (*Emberiza cirrus*) in North Cheshire.—On April 12th, when walking in some meadows about six miles from Manchester, I noticed a bird flying about a low fence close to a railway embankment. I went cautiously towards it, keeping close to the fence. The bird kept flying in and out of the gaps in the fence, often settling in the grass, and occasionally making an attempt at a song. At first the yellow on the head made me

think it was only a Yellowhammer, but presently getting a better view, I was surprised to see that it was a Cirl Bunting, as I understand that this species is very rare in this part of the country. I may add, however, that I was informed that another example of this species had been seen only about two miles from the spot where I met with the Cirl Bunting. This other example was seen in a little-frequented part of the district in the summer of 1897 or 1898, my informant distinctly recognizing the species; in fact, I closely cross-examined him on the differences between the Cirl Bunting and the common Yellowhammer, but he remained confident that he had correctly diagnosed the species. In the meadows alluded to above the following Buntings occur regularly: *Emberiza citrinella*, *E. schæniclus*, and the local *E. miliaris*.—GRAHAM RENSHAW (Sale Bridge House, Sale, Manchester).

Cuckoos' Eggs in Nest of Red-backed Shrike.—In Dr. Rey's interesting article on Cuckoos' eggs (*ante*, pp. 176–8) there is one observation which shows how different the habits of the same species may be in different countries. I refer to the statement that in the neighbourhood of Leipzig 84 per cent. of the Cuckoo's eggs are found in the nests of the Red-backed Shrike, which in England seems to be one of the most uncommon foster-parents. During the last four years I have certainly seen *in situ* over thirty nests of the Red-backed Shrike, and have had the opportunity of examining the unblown eggs of perhaps twelve or fifteen more, not one of which contained a Cuckoo's egg or a young Cuckoo, though Cuckoos and Shrikes abound in the same meadows. A Cuckoo's egg was found here in 1894 in a Shrike's nest, but there was no other egg, and the nest was apparently a deserted one. A friend who knows the Shrike well, and has found many nests, is of opinion that a pair of Red-backed Shrikes would give a prowling Cuckoo they found in the near neighbourhood of their nest a warm reception, in which I quite agree with him.—JULIAN G. TUCK (Tostock Rectory, Bury St. Edmunds).

Variation in Cuckoos' Eggs.—After reading Dr. E. Rey's views as to the reason of the great variation in Cuckoos' eggs (*ante*, pp. 176–8), it struck me that his theory, that the variation is caused by the different diet supplied to the nestling Cuckoos by their foster-parents, may not generally be accepted by ornithologists as a satisfactory explanation. In the first place, it may be questioned whether there is any material difference in the diet provided by the various species of foster-parents, for even hard-billed birds, *e.g.* Buntings and Finches, feed their young largely on an insectivorous diet. The young Cuckoo would in almost every case be reared mainly on an insectivorous diet by its foster-parents, and when once it was launched out into the world, and dependent on

its own exertions for a food-supply, it would doubtless adopt similar habits of feeding. But if it is the difference in the food-supply that causes the Cuckoos to lay eggs of varied types, I would ask Dr. Rey to explain why the Common Guillemot lays eggs of such wonderful variety? The food of one Guillemot at any rate does not differ from that of another Guillemot. I would ask the same question, too, with regard to the eggs of the Tree Pipit, a species whose eggs show a very great amount of variation. —E. W. H. BLAGG (Cheadle, Staffs).

Colour of the Bill of the Grey Lag-Goose.—At a recent meeting of the British Ornithologists' Club, Mr. Caton Haigh asked me what was the colour of the bill of a Grey Lag-Goose (*Anser cinereus*). I answered, as probably many other persons interested in ornithology would have done, flesh-colour. Now, this last winter I have had opportunities for examining twenty freshly killed Grey Lag-Geese, and in no single instance was the bill flesh-colour. All the ornithological works that I have been able to refer to give the colour as flesh-colour, with the exception of Mr. F. O. Morris. I have looked it up in Seebohm's 'British Birds,' Yarrell, Mr. Howard Saunders's 'Manual,' Prof. Newton's 'Dictionary,' Col. Irby's 'List,' &c., with the same result. All the Geese that I examined were killed by me in March, and I took the trouble of catching some wing-broken birds alive so that the colour should have no opportunity of fading. Each bird had a lemon-coloured bill, almost pale orange, with a narrow flesh-coloured line down the centre, and a white nail. Can the explanation be that this is the colour only at this time of year, or that all these authors have taken the colour from the skins? for after the Geese had been dead some days the colour became more as they state. I shall be very glad to hear the opinion of naturalists or sportsmen, who may have had chances of examining freshly killed specimens, as to the colour of the bill they have found, and at what season of the year they have made their observations. The weight of the birds killed varied between $6\frac{1}{2}$ lb. and $9\frac{1}{2}$ lbs., so that it is probable that I examined both old and young birds.—H. LEYBORNE POPHAM (21, Ryder Street, London, S.W.).

[Macgillivray described the bill of this bird as "yellowish orange, with the unguis white or bluish grey."—ED.]

Russian Partridges.—I recently saw, in the shop of a local game-dealer, some Russian Partridges with black horseshoes on their breasts. I should be glad to know whether these birds come from any particular district, as most of the Partridges sold as Russian that I have previously noticed have little to distinguish them from English birds.—R. H. RAMSBOTHAM (Shrewsbury).

Heavy Death-rate of Lapwings.—The month of March, 1899, has been notable for having—at least here—the most severe snowstorm which has been experienced for well over half a century. The result is that considerable disturbance has been caused in the ordinary habits of our birds. The occasion has been conspicuously brought to notice by the many Lapwings (*Vanellus vulgaris*) which have been starved to death. Twenty were seen dead here within a few yards of each other. Of course they rushed towards marshes and water sides for food and shelter; but they seem to have succumbed to the severity of the frosts, as they could have easily obtained sufficient food to keep them alive, the ground being quite fresh about the damp places where they find food in cases of ordinary "Lapwing storms," as they are locally called—*i. e.* storms occurring after the arrival of the Lapwings. Others could be seen in a very feeble condition, being apparently only capable of flying with great exertion. These birds were being threatened with extermination by the prevalence of assiduous egg-collecting, until measures were adopted to terminate it by a certain date of the year. There is no doubt that these birds have increased in numbers since, but this arctic visitation has clearly done much in limiting that increase. Lapwings seem to have little notion of impending storms, if we judge from the certainty by which a few bright days in early spring bring them to their summer resorts. But I may observe that before an ordinary spring snowfall they are in the habit of collecting in flocks, and apart from being led to any place where available food has a common attraction. There is no doubt that such a severe and protracted storm at the date mentioned must affect many birds seriously, and the question of the particular situation of our various migratory birds must be of value in comparing their instinctive powers to keep in their winter quarters until that season, in the strict sense, has passed away. The exact date of the equivalent here to the present stormy March is 1837, and before that a short April storm in 1813. A similar March storm occurred in 1812.—WM. WILSON (Alford, Aberdeen, N.B.).

Nesting of the Common Snipe (*Gallinago cœlestis*) near London.—It may perhaps interest some of your readers to know that a nest of the above species, containing four eggs, was discovered on Epsom Common on the 17th of April. I have not heard of the nest of the Snipe from this locality for the last five years, and believed that it had deserted this spot, which was formerly somewhat favoured by it both in winter and occasionally in the nesting season.—JOHN A. BUCKNILL (Hylands House, Epsom, Surrey).

Songs of Birds affected by Weather (*vide Zool. ante*, p. 183).—No birds have sung here since I came up on the 8th of April, except one Wren,

and to-day (April 19th) one Chaffinch. Why? Surely, surely the awful climatic conditions. The climatic conditions, I consider, may be easily imagined by those who live in more favoured climes by the simple statement, "No birds singing"; to which I append the rider: Trout are *not in condition* when birds are not in song, in late seasons like this spring of 1899.—J. A. HARVIE BROWN (Drachlaw, Turriff, Aberdeen).

REPTILIA.

Notes on the Cape Monitor (*Varanus albigularis*).—The Cape Monitor seems to be fairly plentiful in the Transvaal, judging from this district. I have often come upon them basking in the hot sunshine on the bank of a "spruit" (rivulet). When disturbed by a human intruder they will leap into the water with a "flop." On Aug. 1st, 1898, I found in a female twenty-four eggs of a dull white colour, not unlike snake's eggs, and oval in form, about the same thickness as a fowl's egg, but considerably longer. I have seen a couple in confinement for some time now. One was an old one (the largest I have seen here), and was quite ugly (presumably with age), the skin being rough, the colour very dirty-looking and faded. It has been like that ever since it has been in captivity, now some nine months. This one measured about four feet in length. It was very sluggish in its movements, and, when teased or even approached, would emit a sort of hissing sound, and lash out with its tail. I had a younger one also, not more than eighteen inches long. This little reptile was very "slippery" and shy. When come upon suddenly in its favourite occupation of lying in the hot sun, it would dart in among the stones which formed its home like a "flash of lightning," figuratively speaking. These specimens lived on raw beef, also Crabs and Frogs. Though they had a tank of water, they were found more often out of, than in it. — ALWIN C. HAAGNER (Dynamite Factory, Modderfontein, Transvaal).

[All the Monitors which I found around Pretoria belonged to the species *V. niloticus*. I am glad to learn that Mr. Haagner's experience in keeping *V. albigularis* in captivity was more satisfactory than mine in reference to the first named species.—ED.]

NOTICES OF NEW BOOKS.

The Foundations of Zoology. By WM. KEITH BROOKS, Ph.D., LL.D. New York and London: Macmillan & Co. Ltd.

THIS volume of the "Columbia University Biological Series" perhaps prompts, rather than explains, the question as to what are "the foundations of Zoology." Are they to be sought in the laboratory, or are they to be derived largely by purely mental processes? Or are physical demonstrations to be allied to, made altogether subservient, or treated only as secondary in position to philosophical conceptions? This problem must occur to the reader as he studies in these pages the author's views and commentaries on the writings of Huxley, Lamarck, Galton, Weismann, Darwin, Paley, Agassiz, and Berkeley.

Prof. Brooks has a philosophical position of his own. He is clearly not Neo-Lamarckian, a term applied at present to so much American speculation; he may be better described as Anti-Lamarckian. He is not a Pyrrhonist, though on many questions he gives the verdict only of "not proven." Perhaps an extract may give a better clue to the foundation on which he rears a philosophy which is more critical than affirmative, and vibrates between the idealistic and materialistic conceptions. "I am not able to answer the question whether, in ultimate analysis, the principles of science are physical or metaphysical. I know nothing about things ultimate. I do not know what the relation between mind and matter is. I do not know whether the distinction between 'things perceived by sense' and 'relations apprehended by the mind' is founded in nature or not; but I am sure that natural knowledge is useful to me, that it is pleasant, and profitable, and instructive; and I must ask whether all this does not show that nature is intended?"

The main issue is seemingly whether these questions are biological or metaphysical; or whether, appertaining to both

realms, they can or should be separated? Is it a fact, as Prof. Brooks believes, that there is a partial failure of training in biological laboratories to make naturalists of the students; and is the explanation of that failure "the belief that our biology (the biology of the present day, and not that of the unknown future) ends with the study of the structure and functions of the physical basis—the belief that biology is 'nothing but' the discovery of its physical and chemical properties"? It is at least probable that we have also naturalists who are not philosophers, and philosophers who are not naturalists.

Zoology to-day is a science of so wide and exhaustive a nature, that its student may indeed form philosophical conclusions, while having no time for the wide reading and reflection necessary to the acquisition of a mental competency. Aristotle's knowledge of zoology was small indeed compared with what may readily be acquired at the present day, but the position is reversed when his philosophical method is compared with modern speculative gymnastics.

This book may be well commended to the perusal of those who love debatable matters, and who seek to tread the labyrinth of biological speculation. It is a good, but not altogether an easy book to read. It is not assertive, but rather argumentative; it often quotes only to question, and frequently details a proposition to show its weakness. Sometimes we ponder over such a conclusion as the following:—"Biology is not a closed science, and Darwin's view of the matter is not proved—possibly is not provable; but its great value is in the proof that there is no shadow of evidence for any other view." Does not this constitute Herbert Spencer's canon of truth—or proof—by the inconceivableness of the contrary? The great importance of these works is that they do not entreat assent, but demand consideration; their mission is not so much to convince as to promote thought:—"Scientific men who are not zoologists are fond of telling us science has nothing to do with the Why? and is concerned only with the How? but, in zoology, it is often easy to discover why an action is performed, while we are very ignorant of the structural conditions under which it takes place."

The Penycuik Experiments. By J. C. EWART, M.D., F.R.S., &c.
Adam & Charles Black.

THE title of this book may sound a little *outré* to some biologists to-day, but cannot be misunderstood in the course of a few years, when the breeding experiments of Prof. Ewart will be more generally known to zoological science. Our readers will remember a paper "On Zebra-Horse Hybrids," which appeared in these pages last year, and which in the 'Penycuik Experiments' is reproduced. Penycuik is the Midlothian abode of Prof. Ewart, who has now for some years followed the breeding investigations that so long occupied Darwin; and though to the general public these are better known as the Zebra hybrid experiments, much valuable work has been done with Pigeons, Fowls, Dogs, and Rabbits. The result, as might be expected, leads to another nail in the coffin of our old fetish "species," and the dogma as to its immutability. "Among plants, hybrids are sometimes quite fertile; while some crosses are quite, or almost, sterile. There is no hard and fast line between species and varieties, and hence there can be no fundamental difference between a hybrid and a cross, nor yet any *a priori* reason why any given hybrid should be sterile, or any given cross fertile. It is no longer possible to contend that species were originally endowed with mutual sterility, by way of preventing the confusion that would result from free interbreeding."

Prof. Ewart recognizes three distinct types of Zebras:—*Equus grevyi*, *E. zebra*, and *E. burchelli*, which, ignoring the now generally considered extinct *E. quagga*, is in agreement with the views of Mr. Pocock (*cf.* Zool. 1897, p. 380). He has bred nine Zebra hybrids by crossing mares of various sizes (from 11 to 15 hands) and breeds with his Zebra stallion, and possesses also three hybrids out of Zebra mares, one sired by a donkey, the other two by Ponies. The importance of these experiments is clearly seen by the separate considerations and discussions on such interesting biological problems or suggestions as—Reversion, Prepotency and Inbreeding, Telegony, Saturation, and Sterility; while the conclusion is reached that "there is obviously no real difference between cross-fertilization and intercrossing. Whether we interbreed or intercross, engage in 'line'

breeding or 'cross' breeding, we are making use of cross-fertilization. Further, I may add, the difference between intercrossing and hybridizing is one of degree, not of kind."

This book is beautifully illustrated, characteristically bound, and, unfortunately, unprovided with an index.

Wild Animals I have Known. By ERNEST SETON THOMPSON.
New York City: C. Scribner's Sons.

MR. THOMPSON is the Carlyle of the animal world outside man: he sees the Zingis Khan, the Attila, the Napoleon among his Wolves, the Rachel among his Foxes, the bandit chief leading his Dogs. "What satisfaction would be derived from a ten-page sketch of the habits and customs of Man? How much more profitable it would be to devote that space to the life of some one great man. This is the principle I have endeavoured to apply to my animals." Thus we have a few vivid and brilliant sketches of animal life which we should unhesitatingly describe as a new departure in fiction, were we not warned in a "Note to the Reader," "these stories are true." We are not led to the sceptical position by any unreality of the narrative, but rather marvel at the psychological sympathy with, and apprehension of, ideas and conceptions which are so commonly described as belonging to the instincts of brutes. The story of the King-wolf Lobo, who remains unconquered by his many justly-incensed enemies, and who by his cunning, or intellect, defies all their stratagems, till the death of his loved bitch Blanca renders him reckless, and proves his undoing, is only another story of the rise and fall of the great and much-admired man-wolf amongst ourselves. The Dog Bingo that must go wolfing, but comes home to die; the Fox Vix, courageous to frenzy on behalf of her young, are amongst some of the strongest characters of this more than interesting book. We are often warned against ascribing our own mental processes to other animals, and thus forming erroneous conclusions as to their cognitions and psychology. Do we not rather greatly err on the other side? Is it not more reasonable to argue that we have indeed passed on, but that in leaving them behind we have not altogether severed our

common cognitions? The perusal of this book, with its altogether charming illustrations, must tend to lead to a better understanding. One remark expresses the keystone to much modern speculation: "No wild animal dies of old age. Its life has soon or late a tragic end. It is only a question of how long it can hold out against its foes."

Report of Observations of Injurious Insects and Common Farm Pests during the years 1897 and 1898. By ELEANOR A. ORMEROD, F.R.Met.Soc., &c. Two Parts. Simpkin, Marshall, Hamilton, Kent & Co., Limited.

SINCE we noticed the Report for 1896, two more of these annual contributions to economic entomology have appeared. They are written with the same care and thoroughness as distinguished their predecessors, and exhibit the same voluntary and enthusiastic devotion to the study which is likely, in a material sense, to reward readers and students rather than authoress. Two welcome announcements are made. A general index to the long series of reports which have now been published—twenty-two in all—will shortly be issued; and Miss Ormerod has now secured the co-operation of Mr. Robert Newstead, of the Grosvenor Museum, Chester, whose power of microscopic observation and delineation, with a special knowledge of the *Coccidæ*, must prove of a helpful character.

The work of Miss Ormerod is not confined to the publication of these Reports, but is also engaged in the management of what may be called a private consulting economic bureau on insect pests and their depredations. In 1897, we read that the correspondence "amounted approximately to about three thousand letters received"; and as these may be considered as mostly in the nature of enquiries, this scientific enterprise pursued privately by one lady is probably unique.

The Forest Fly (*Hippobosca equina*), the pernicious Horse pest, whose presence up to 1895 was considered in this country to be wholly confined to the New Forest or its vicinity, has now been only too clearly demonstrated to have established itself in the south of South Wales. Hay imported from South America contains very frequently specimens of the Migratory Locust

(*Acridium (Schistocerca) paranense*); in one case the average was a Locust to a pound of the Alfalfa (Lucerne) hay which was landed from Buenos Ayres; in another instance there were no fewer than two hundred specimens in one truss. Such food, it need scarcely be pointed out, is at least highly suspect for Horses. We might multiply extracts to show that these reports are of the first interest to agriculturists, farmers, and rearers of stock, whilst to the naturalist and entomologist they embody a series of faithful life-histories.

A Text-Book of Agricultural Zoology. By FRED. V. THEOBALD, M.A., &c. Wm. Blackwood & Sons.

NOT only the farmer and the agriculturist, but also that numerous class whose urban prosperity permits rural residence and pursuits, frequently seek—and sometimes vainly—for some authentic information respecting the animal friends and foes with whom they are brought in contact. As a rule, farmers are not zoologists, nor are all country residents naturalists, consequently the few books which now exist on the subject—and we must not overlook Miss Ormerod's excellent contributions—may be well supplemented. Mr. Theobald's profusely illustrated volume is a compilation which contains much scientific matter over and above animal biography and narrative. It grapples largely with modern animal classification, detailing some anatomy, but more physiology. And as the book is likely to fall into the hands of those who have received no particular biological instruction, it should serve a good purpose. To such readers it is most opportune to show that zoology and botany are only divorced sections of natural history, not necessarily distinct sciences. When Mr. Theobald discusses animals and plants, he is forced to acknowledge:—"In fact, there is no hard-and-fast line to be drawn between these two organic groups. Such lowly creatures as *Volvox* are treated by botanists as plants, whilst the zoologist includes them in the Protozoa." Organic nature lends herself to the systematiser, or she could neither be studied nor understood, but she still remains one and indivisible.

A good word is said for the usefulness of those furred and

feathered creatures which the gamekeepers have classed under the section "vermin," and have sentenced to extermination. It is, however, probable that those worthy and energetic men are not likely to read these pages, or to agree with them if they did.

"The prevention of vermiceous diseases" is the subject matter of Appendix I. In some respects, in perusing this section, we seem to be again reading some of the modern injunctions for preventing the spread of phthisis among ourselves. Diseases, "such as husk, are spread by the embryos being brought up in the mucus from the air-passages; these germs are scattered about upon the ground, and thus sow the seeds for numbers of other lambs and sheep to obtain. When that spasmodic cough so characteristic of 'hoose' is heard, it is surely advisable to remove the animal, and so prevent it from contaminating the ground."

EDITORIAL GLEANINGS.

PROFESSOR OTHNIEL CHARLES MARSH, of Yale University, died at New Haven, March 18th, in the sixty-eighth year of his age. He was born at Lockport, New York, in 1831, and was graduated at Yale in 1860. He subsequently studied several years under leading specialists in Europe, returning to New Haven in 1866, where he has since occupied the chair of Palæontology. He has long been recognized throughout the world as one of the leading authorities in vertebrate palæontology. His explorations in various parts of the West for fossil vertebrates began in 1868, and in subsequent years he amassed the immense collections which have been so long famous. The results of his investigations have been published in a long series of papers and memoirs, numbering nearly three hundred titles, covering a period of more than twenty-five years. His unrivalled collections of fossils, as yet only partly worked up, he presented to Yale University, with a considerable endowment for carrying on and publishing the results of further investigation of this great mass of material. Prof. Marsh is well known to ornithologists for his numerous publications on fossil North American birds, including his great quarto memoir 'Odontornithes: a Monograph of the Extinct Toothed Birds of North America,' published in 1880. Probably five-sixths of the known extinct North American birds have been described by Prof. Marsh. His scientific work brought him many honours both at home and abroad. In 1878 he was chosen President of the American Association for the Advancement of Science, and from 1883 to 1896 he was President of the National Academy of Sciences (The 'Auk').

WE regret to announce the death of Joseph Wolf, eulogized by Landseer himself as "without exception the best all-round animal painter that ever lived." Many obituary notices have appeared in our current press, but a particularly full and excellent *résumé* of his life's work has appeared in the 'Field,' from which we extract the following:—

"Born at Möerz, near Coblenz, in 1820, the son of a farmer, his powers of observation and delineation of animal life were made manifest at an early age, and his talent as a draughtsman soon obtained employment for him.

"The first work which brought the artist's name prominently before the scientific world was Rüppell's 'Systematische Uebersicht der Vögel Nordost Afrikas,' published in 1845, in which some fifty African birds are depicted in attitudes which contrast strongly with the stiff and unnatural positions in which previous artists were wont to portray their subjects. We look upon these illustrations as instituting the *renaissance* period in ornithological drawing. In 1850 appeared Temminck and Schlegel's quarto volumes on the fauna of Japan, which, with Wolf's coloured plates, still constitute one of the best illustrated works on natural history. Quickly following this came Schlegel's grand 'Traité de Fauconnerie,' in folio, with life-size portraits by Wolf of all the Hawks employed by falconers. Each one of these is a study which deserves attention.

"The late Mr. G. R. Gray's standard work, in three volumes quarto, on the 'Genera of Birds,' a copy of which cannot now be obtained under £30, was partly illustrated by Joseph Wolf, in consequence of the acceptance of a foreign appointment by the late Mr. Mitchell, the former secretary of the Zoological Society, who had been working at it jointly with Gray.

"Those who are familiar with the magnificent folio works of Gould on the 'Birds of Asia' and the 'Birds of Great Britain' will recognize in many of the life-like coloured plates the handiwork and talent of Joseph Wolf; while the same remark will apply to Elliot's grand volumes, also in folio, on the Pheasants, Birds of Paradise, the Birds of North America, and the *Felidae* or Cat family.

"More than half a century ago the Zoological Society of London, recognizing Wolf's extraordinary talent in depicting animal life, secured his services to illustrate their periodical publications, and from that time forward the 'Proceedings' and 'Transactions' of the Society have teemed with the life-like productions of his pencil. Visitors to the picture gallery over the reptile house at the Zoological Gardens can scarcely fail to have been struck with his remarkable 'Zoological Sketches,' which were produced under the auspices of the Society, and there adorn the walls. In the numerous coloured plates which have illustrated the 'Ibis' from the commencement of that quarterly journal of ornithology in 1859, we have another example of the artist's wondrous skill in the delineation of birds.

"We may pass over the many large works, both in oils and water-colour, which have passed from the easel to the private cabinets of those who know well how to appreciate them, because, although we have had the privilege of seeing many of them, the public have had no opportunity, as with the exhibited works of other artists, to judge of their merits. We may remind our readers, however, that numerous works on sport and natural history have been entirely illustrated by Joseph Wolf. Of these we may name Anderson's 'Lake Ngami,' Livingstone's 'Missionary

Travels,' Atkinson's 'Amoor-land,' Emerson Tennent's 'Ceylon,' and the same author's 'Wild Elephant,' Baldwin's 'African Hunting,' Col. Walter Campbell's 'Indian Journal,' Bates's 'Naturalist on the Amazon,' and Wallace's 'Malay Archipelago'; while many beautiful full-page plates from his pencil adorn the works of Lewis Lloyd, A. E. Knox, Henry Stevenson, Philip Gosse, Canon Tristram, Professor Newton, and the Duke of Argyll. Nor should we omit to notice his 'Life and Habits of Wild Animals,' which appeared in 1874, illustrated from his designs, engraved by Whymper, with descriptive letterpress by D. G. Elliot."

MR. J. ARTHUR THOMSON, Extramural Lecturer on Zoology in Edinburgh, has been appointed to succeed the late Prof. Alleyne Nicholson as Regius Professor of Natural History in the University of Aberdeen.

OUR contributor Mr. F. Coburn has recently written, in the 'Birmingham Daily Post,' on the subject of the Public Natural History Collection in Birmingham, which included, or rather consisted of, the collection of specimens formed by the late Dr. Sands Cox. "The loss the city has sustained through not possessing a properly appointed natural history museum, presided over by a competent curator, at the time when this great collection was handed over to the custody of our authorities, is absolutely irreparable, and the fate which has befallen the bulk of that collection forms one of the strongest arguments which could be advanced for the establishment of a museum, for there are still a few gems left in that collection which ought to be saved. This collection must have cost its founder almost a fabulous sum of money, for it was peculiarly rich in forms which were most difficult to procure in those days. The collection of British birds was a very fair one, but its greatest value lay in the African, Indian, Australian, New Zealand, and New Guinea forms, some of which are now totally extinct, while others are on the verge of extermination."

Amongst its present treasures is the *Nestor productus*, or Phillip Island Parrot. This "is one of the greatest treasures which any museum in the world can hope to possess, as it is now generally admitted to be totally extinct; and, according to Professor Newton ('Dictionary of Birds,' p. 224), only about twelve skins, exclusive of the Birmingham specimen, are known to exist in the world. Thus it becomes a far greater rarity than even the Great Auk, a specimen of which was recently purchased by the Edinburgh Museum for, I think, 350 guineas, this being considered a very low figure. There are over sixty skins of the Great Auk known to exist, against about a dozen of *Nestor productus*. Its great value, therefore, is apparent at

once. I should say that at a very modest estimate the skin is worth at least 600 guineas. There are a good many who, I have no doubt, would put it down at 1000 guineas. Here then is a veritable gem, the possession of which alone ought to act as a powerful lever in inducing the Council to provide a proper museum in which to house it. It is, I believe, now locked up in an iron safe in the possession of Mr. Whitworth Wallis." In this collection there appears to have been a most formidable weeding-out process.

IN the 'Zambesi Mission Record,' a Catholic publication, we notice an interesting article by Father O'Neil, S.J., on "Some interesting Beetles," as observed in South Africa. "'Tockies' are large heteromerous beetles, generally black or brown in colour. They have been called 'Tockies' in consequence of a habit they have of knocking loudly on the ground to attract their mates. Let us watch one of these insects walking about in search of a partner. It advances a few paces, then stops, and, raising a rather unwieldy body on its long legs, gives four or five rapid knocks in succession. Then there is a pause, a further advance, and the knocking is repeated. After a bit answering knocks are heard, and our Tocky sets to work knocking most vigorously to aid in the determination of his whereabouts. As might be expected, the Tockies have given rise to many a ghost story. Though they walk about a good deal during the daytime, they are especially active at night; and, when doors are left open after dark, will frequently enter the bedrooms. Then in the dead of the night some unfortunate individual is awakened by a loud knock, knock, knock. If he be of a nervous disposition, and unfamiliar with our rapping friends, the result can be imagined. I know a pious gentleman who one night was firmly persuaded that one of the holy souls had come knocking for prayers. Here in Dunbrody the Tockies are often very troublesome, owing to the fact that our ceilings consist of thin laths, which make glorious sounding boards. One particular kind of Tocky will insist upon climbing up the walls of the house, and hammering away overhead at night time. More than one member of the community, myself among the number, have been kept awake during the greater part of the night by an almost uninterrupted tattoo. The noise the beetle makes when exercising itself on these laths is just like a loud knocking at a door. Not long ago one of them started rapping overhead about supper time. 'Come in,' cried the reverend father, whose room adjoins mine. 'Knock, knock, knock,' replied the Tocky. 'Come in,' *shouted* his reverence this time. My laughter unfortunately put a stop to the fun. I must not dismiss the Tockies without alluding to their omnivorous quality. Though it generally feeds on plants of one kind or another, the beetle seems to be capable of devouring

almost anything. It is quite common to see one of them dining off a departed brother."*

WE have received the Annual Report of the Millport Marine Biological Station for 1898:—"The Committee are now in a position to give an account of the first year of the actual working of the Station. Under these circumstances they consider the Report of 1898 to be of great importance, seeing that it is the first which provides data from actual experience by means of which a forecast of the future success of the Station may with some degree of certainty be drawn. They feel that they have every reason to be satisfied with the results of this crucial year. They can report good progress, not only in regard to the numbers who visited the Robertson Museum, and to the degree in which the facilities afforded by the Laboratory were utilized by scientific workers, but also in regard to the measure of public support accorded to the scheme. From the Curator's Report it will be seen that there were over eight thousand visitors to the Robertson Museum during the past year, and that tables in the Laboratory were utilized for terms varying from a week to a month on thirty-eight different occasions. During the past year many additions have been made to the Station, especially in the Laboratory Department, where good sets of reagents, dissecting-troughs, and vessels have been provided. A dark room for photographic purposes has been constructed. A system of heating the Laboratory and Museum by hot-water pipes has been carried out. Out-buildings for work and store-rooms have been built, and the laying down of a jetty near the Station will be carried out as soon as possible. An apparatus for keeping up continuous motion in a number of vessels has been fitted up, &c. The carrying out of an efficient system of heating was a work of very great importance. During the previous winter, partly owing to the newness of the building and to its situation near the shore, and partly also to the method of heating then in use, a portion of the Robertson Collection, in particular the *Foraminifera* and *Ostracoda*, suffered from damp. Mrs. Robertson set herself to the arduous task of cleaning and remounting the whole of these specimens. It is matter for congratulation that no such injury can now happen to the collection, as it was matter for regret that it ever did occur."

COLCHESTER has its Oyster feast, Greenwich its Whitebait dinner, and now Great Yarmouth, on the 10th of last December, held its inaugural "Sprat Banquet." From a "Souvenir" which has been published detailing this function we find some facts relating to *Clupea sprattus* which are at

* "Beetle" is evidently here alluded to.—ED.

least interesting. According to Mr. Edward T. Ayers, "Sprat fishing is not followed in Yarmouth, though the fish is found in large shoals off the coasts of Norfolk, Suffolk, Essex, and Kent. In summer it is said to inhabit the deep water, and then in roe, and to be in highest perfection as food when the season for fresh Herrings has closed, and it does not visit us until November approaches. Southwold on the Suffolk coast and its neighbourhood have long been celebrated for Sprat catching and curing. Some fine and delicious Sprats were a few years ago taken in the South Ham at the entrance of Yarmouth Harbour, and the Yarmouth Herring curers are also good hands at curing Sprats."

Our contributor, Mr. A. Patterson, has of course some information to afford. "*Clupea sprattus* runs to about 5½ in. in length. Three are recorded in January, 1882, off Aldeburgh, over 6½ in. long. It spawns locally in the early spring, the time varying a little in different localities. On Feb. 29th, 1896, an unusual catch of Sprats occurred; some were found full of roe. In Scotland it is known as the *Garvie*; by the German as *die Sprott*; Dutch, *Sprot*; Swedish, *Skarpsill*; French, *le Melet* and *l'Esprot*; and Welsh, *Coog Bennog*. In habits it is gregarious; generally in big shoals; in cold weather it nears the shore—differing from the Herring and Pilchard, which retire to deeper waters. It may be located by the hosts of Gulls and other sea-birds which follow it eagerly, devouring myriads. In turn the Sprat preys on minute crustaceans, the transparent Opossum Shrimp (*Mysis chameleon*) in particular, which teems in certain localities. A small parasitic entomostracean (*Lerneonema monilaris*) is often found attached to its eye. This creature, which so anchors itself with its long trailing thread-like ovaries, is of a beautiful green colour, and more interesting to the naturalist than to its unfortunate possessor. Fishermen call them 'Lantern Jacks,' and believe that the bearers of the 'Lantern Jacks' are the pilots of the shoal."

A speaker at the banquet gave a very dispiriting account of last year's Herring fishing. "Unfortunately 1898 had proved one of the worst of seasons for the Herring fishing. The catch was 4000 lasts less than last year, which meant a loss of some £30,000 to the catchers and boat-owners, and of from £8000 to £10,000 to the workpeople, all of which would have been spent in Yarmouth and the district. Moreover, this year the Herrings had been of very poor description, the worst for many years in point of size and quality. Yarmouth had never failed of its Herring fishing except in bad weather. The Herrings were always here. Some people thought trawlers did the Herring harm. He did not think it, because smacks trawled up not only flat fish, but Haddock and Dog-fish, which were the greatest enemies of the Herring, consuming immense quantities of spawn."

THE London School Board have now the subject of Natural History Collections before them. The following extracts are from the 'Daily Mail':—"Tempting as may seem the offer of the entire contents of a museum for £51, some members of the London School Board (March 2nd) seemed disinclined to purchase on the principle that it was too cheap to be good. [We are entirely of that opinion.—ED. Zool.] The collection in question is at present in the possession of the Shoreditch Public Libraries Committee, and consists *inter alia* of:—Twenty-four cases of birds intact; 9 cases of birds broken, the whole being somewhat dirty; 223 birds unmounted, badly preserved, and probably not worth the trouble of mounting; 15 Emu and 20 Guillemot eggs; 291 eggs and 14 nests; 14 boxes of eggs; 68 jars of reptiles; 57 boxes of shells; cabinet of Lepidoptera (cabinet in bad condition, and the specimens attacked by mites); 43 boxes of Lepidoptera, 32 of Coleoptera, 8 of Hymenoptera, and other Lepidopteral rubbish; 26-drawer cabinet of minerals, fossils, and shells (cabinet very bad); 28 boxes of minerals, very dirty and unclassified; 2 cases and 2 cabinets of minerals; a collection of polished pebbles, garnets, &c., about 1½ tons in weight; groups of coral, coins in cases, cases of medals, bones, tiles, glass jars, boxes, &c. One member was very sceptical as to the worth of the museum. He asked if the word 'mite' was not a misprint for 'mice,' but was informed, amid laughter, that 'mite is right.' In the end the Board resolved to purchase mites and all, provided one and a half tons of loose fossils were thrown in. The whole collection, it was stated, cost about £1000."

THE Rev. J. Conway Walter has contributed some interesting notes on "Fox and Dog Hybrids near Horncastle," to the April issue of 'The Naturalist.' Mr. Walter exhibited, at the meeting of the Lincolnshire Naturalists' Union in 1897, a case containing two stuffed specimens of a cross between a Fox and a Dog, the sire being a male Fox (*Vulpes vulpes*), and the mother a half-bred bitch between Shepherd Dog and Whippet. The mother was bought by M. Suchetet with a view to further experiments. Since then several similar hybrids have been produced in the same neighbourhood. In one case, at Ashby Puerorum, a farm-bailiff, named Cross, tied his Shepherd bitch near a Fox-earth, and the one pup reared is now in the possession of Mr. Frank Dymoke, of Scrivelsby Park. In another case a gamekeeper near Louth tied a bitch in a wood, in the nutting season, to give warning of trespassers, and subsequently the bitch had pups, evidently a cross with a Fox. One of these is now in the possession of Mr. Waltham, dealer in china, High Street, Horncastle. Another is in the possession of Mr. E. Walter, farmer, of Hatton, a cousin of Mr. Stafford Walter, who bred the original hybrids, which were exhibited in 1897.

